



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/423,948

04/14/2000

LEONID BERESNEV

2345/103

7349

26646

7590

10/14/2008

KENYON & KENYON LLP
ONE BROADWAY
NEW YORK, NY 10004

EXAMINER

NGUYEN, HOAN C

ART UNIT

PAPER NUMBER

2871

MAIL DATE

DELIVERY MODE

10/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/423,948	Applicant(s) BERESNEV ET AL.	
	Examiner HOAN C. NGUYEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-27 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 6-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to the amended claims 6, 12, 17-18, 23 based on the Response filed on 07/07/2008 have been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Claim 1-5 are cancelled.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 6-8, 10-14, 16-19, 21-25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Lang (US3635552) provided in IDS.

In regard to claims 6, 12, 17 and 23, De Lang teaches (Fig. 1) a tunable interferometer for measuring an optical surface comprising:

- at least one light source 1;
- a reference surface 5, light from the at least one light source impinging the reference surface, the reference surface reflecting a first interference beams

Art Unit: 2871

wherein the reference surface is stationary when at least one light source impinges the reference surface 5 (see attachment);

- a test object 12, light from the at least one light source impinging the test object, the test object reflecting a second interference beam (see attachment);
- at least one beam splitter 3, the first interference beam and the second interference beam striking the at least one beam splitter; and
- a polarizer 6 & 7 polarizing the first interference beam and the second interference beam so that the first interference beam and the second interference beam each have a different polarization state relative to one another; and
- an analyzer, **including rotated analyzer 10, image field 11 and detectors 32-33**, positioned at an output of the interferometer, the analyzer having a variable polarization state (rotating), the analyzer tuning the interferometer as a function of the polarized first interference beam and the second interference beam, wherein depending on the polarization state of the analyzer, an additional phase inherently is introduced into at least one of the first and second interference beams of different polarizations so that an interference fringe pattern is displaced by a distance **from height of the object** (with electrical signals produced in detectors 32-33 having a phase difference equal the optical phase difference between beams 15 and 16; the col. 3 lines 19-27). **Height of the object is measured or detected by distance of a shift in the interference fringe pattern since different height cause the interference fringe pattern shift.**

wherein

Art Unit: 2871

Claims 7, 13, 18 and 24:

- the interferometer is a two-beam interferometer, wherein the light is a linearly polarized light and wherein the polarizer includes a first $\lambda/4$ retardation plate 7 allocated to the reference surface, and a second $\lambda/4$ retardation plate 6 positioned before the analyzer and after beam splitter to form a circular polarized light of the first and second interference beams.

Claims 8, 14, 19 and 25:

- the analyzer includes a rotatable linear analyzer (abstract and col. 3 lines 28-29).

Claims 10, 16, 21 and 27:

- the analyzer is arranged physically separate from the interferometer.

Claims 11 and 22:

- the test object 12 is stationary when the at least one light source impinges the test object.

De Lang fails to disclose the interferometer of one embodiment according to Fig. 1 including the polarizer being disposed after the light source and before the beam splitter.

De Lang discloses the interferometer of another embodiment according to Fig. 4 including the polarizer 41 being disposed after the light source 40 and before the beam splitter 42.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a tunable interferometer as De Lang disclosed with the polarizer being disposed after the light source and before the beam splitter for converting the beam into linearly polarized light as another embodiment taught.

2. Claims 9, 15, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Lang (US3635552) as applied to claims 6-8, 10-14 and 16, and in further view of Sharp et al. (US5627666).

De Lang fails to disclose the interferometer having the analyzer including an electrically tunable liquid-crystal element with a linear polarizer.

Sharp et al. teach (Fig. 3) the interferometer (col. 2 lines 20-21) having the analyzer including an electrically tunable liquid-crystal element 10/20 with a linear polarizer 40.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a tunable interferometer as De Lang disclosed with the analyzer including an electrically tunable liquid-crystal element with a linear polarizer for increasing tuning range (col. 2 lines 35-46).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOAN C. NGUYEN
Examiner
Art Unit 2871

Chn

/Andrew Schechter/
Primary Examiner, Art Unit 2871